

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims**

1. (canceled)
2. (currently amended) ~~The furnace of claim 1~~ A fused silica soot production furnace comprising:  
a precursor delivery system for delivering silicon containing precursor to the furnace;  
a burner for producing a flame and converting the precursor into silica-containing soot;  
and  
a crown constructed from a foamed refractory material having a network of interconnected pores, wherein the pores in the foamed refractory material having a surface area greater than 0.5 m<sup>2</sup>/g.
3. (currently amended) The furnace of claim 2, wherein the foamed refractory material has a porosity greater than 50%.
4. (original) The furnace of claim 2, wherein the foamed refractory has a density less than 1.5 g/cm<sup>3</sup>.
5. (original) The furnace of claim 2, wherein the foamed refractory contains iron and sodium impurities less than 10 parts per million.

6. (canceled)

7. (currently amended) ~~The method of claim 6, wherein the~~ A method of manufacturing a fused silica boule comprising the steps of:

providing a furnace including crown constructed from a foamed refractory material having a network of interconnected pores, wherein the pores in the foamed refractory material have a surface area greater than  $0.5 \text{ m}^2/\text{g}$ ; and

introducing a silicon-containing precursor into a flame to produce fused silica particles, collecting the particles on a collection surface and consolidating the particles on the collection surface to form a boule.

8. (currently amended) The method of claim 7, wherein the foamed refractory material has a porosity greater than 50%.

9. (original) The method of claim 7, wherein the foamed refractory has a density less than  $1.5 \text{ g/cm}^3$ .

10. (original) The method of claim 7, wherein the foamed refractory contains iron and sodium impurities less than about 10 parts per million.